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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/508,335

09/20/2004

Toshihiro Kondo

121101

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07/11/2007

OLIFF & BERRIDGE, PLC

P.O. BOX 19928

ALEXANDRIA, VA 22320

EXAMINER

NGUYEN, TAI V

ART UNIT

PAPER NUMBER

3729

MAIL DATE

DELIVERY MODE

07/11/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/508,335

Applicant(s)

KONDO, TOSHIHIRO

Examiner

Tai Van Nguyen

Art Unit

3729

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-38 is/are rejected.
- 7) ☒ Claim(s) 39-43 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The applicant(s)' amendment filed 5/1/2007 has been fully considered and made of record.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 22-35 and 37-38 are rejected under 35 U.S.C. 102(b) as being anticipated by Asai et al (US 5,692,292).

As applied to claims 22 and 31, Asai et al disclose a working system for a circuit substrate, comprising: a substrate conveyor which Conveys a circuit substrate in a conveying direction along a straight line, and is capable of stopping the circuit substrate at a desired position in the conveying direction; a moving apparatus having a movable member which is movable at least in a direction parallel to the conveying direction of the substrate conveyor, and is capable of moving the movable member to a desired location in the conveying direction (26, 27); a working head which is held by the movable member and performs a plurality of operations for prescribed points on the circuit substrate which has been stopped, a first detector (48) used for decelerating the circuit substrate and a second detector (50) used for stopping the circuit substrate, which are held by the movable member with a space there between in a direction parallel to the

conveying direction and each of which detects a detection portion of the circuit substrate which detection portion is predetermined as an object to be detected, without contacting the detection portion (column 12, lines 19-65+); a substrate stop position controller which controls the moving apparatus to have the first detector and the second detector move to respective predetermined locations, and controls the substrate conveyor Such that the substrate conveyor decelerates in response to the detection of the detection portion by the first detector positioned at one of the predetermined locations and stops in response to the detection of the detection portion by the second detector positioned at the other of predetermined locations (column 13, lines 1-27).

As applied to claim 23, Asai et al disclose wherein the substrate stop position controller includes a memory for storing location-related information (RAM 264), which relates to a location to which the movable member is moved at least in the direction parallel to the conveying direction for detecting the predetermined detection portion with the first and second detectors.

As applied to claims 24 and 25, Asai et al disclose wherein the memory includes a portion for storing, as the location-related information, at least one piece of information about at least one of dimensions and a shape of the circuit substrate (12, 14, 16, 18).

As applied to claim 26, Asai et al disclose wherein the memory includes a portion for storing, as the location-related information, at least one piece of information for stopping the circuit substrate at the center of the range of movement of the working head moved by the moving apparatus in the conveying direction for the operations to the circuit substrate.

As applied to claim 27, Asai et al disclose wherein the memory includes a portion for storing kinds and stop positions of a plurality of kinds of circuit substrates conveyed by the substrate conveyor, such that the stop positions are associated with respectively corresponding kinds of the circuit substrates (92, Fig. 9).

As applied to claim 28, Asai disclose wherein the working head (e.g. 10) includes a component mounting head for mounting electronic circuit components supplied from the component-supplying device at prescribed points on the circuit substrate which has been stopped at the stop position.

As applied to claim 29, Asai et al disclose wherein the component supplying device has a plurality of component feeders, each of which has a component supply portion, contains a multiplicity of electronic circuit components of one kind, and is adapted to sequentially feed the electronic circuit components one by one to the component supply portion, the plurality of component feeders (e.g. 304) being arranged in a row extending in a direction parallel to the conveying direction of the substrate conveyor.

As applied to claim 30, Asai et al disclose wherein the substrate conveyor is a belt conveyor (26, 27) including at least one pair of pulleys (e.g. 32), a belt entrained around the at least one pair of pulleys, and a drive assembly which rotates at least one of the at least one pair of pulleys (e.g. 34).

As applied to claims 32 and 33, Asai et al disclose wherein the first movable member is movable in the direction parallel to the conveying direction of the substrate

conveyor, while the second movable member is movable in a direction rpendicular to the conveying direction (column 12, lines 19-36).

As applied to claim 34, Asai disclose wherein each of the first detector and the second detector detects an edge of the circuit substrate on the downstream side in the conveying direction, as the predetermined detection portion.

As applied to claim 35, Asai et al disclose wherein each of the first detector and the second detector has a photoelectric sensor (e.g. 50) including a light emitting element and a light-receiving element.

As applied to claims 37 and 38, Asai et al disclose wherein the memory includes a portion for storing, as the location-related information, at least one piece of information for stopping the circuit substrate at the center of the range of movement of the working head moved by the moving apparatus in the conveying direction for the operations to the circuit substrate (column 20, lines 8-28).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asai et al in view of Asai et al (US 6,272,051) after herein '051.

As applied to claim 36, Asai et al disclose all of the limitations of the claimed invention except that the photoelectric sensor is of a reflection type including a light emitting element and a light receiving element and being configured such that a light radiated from the light emitting element and then reflected by the predetermined detection portion is received by the light receiving element, to detect the predetermined detection portion.

However, '051 teach the photoelectric sensor is of reflection type including a light emitting element and a light receiving element and being configured such that a light radiated from the light emitting element and then reflected by the predetermined detection portion is received by the light receiving element, to detect the predetermined detection portion (column 23, lines 23-52).

It would have been obvious to one of ordinary skill in the art at this time the invention was made to have modified the method of Asai by including light emitting and light receive, to assist in detection and provide a low cost in manufacturing with a compact construction (column 3, lines 36-38).

Allowable Subject Matter

6. Claims 39-43 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments filed 5/1/2007 have been fully considered but they are not persuasive.

In regard the merits of Asai, The applicant(s) argue that Asai does not teach: "a first detector used for decelerating the circuit substrate and a second detector used for stopping the circuit substrate, which are held by the movable member with a space therebetween in the direction parallel to the conveying direction" (as recited in claim 22, lines 12-14).

The examiner traverses for at least the following reason:

The Asai as fully discussed a first detector (50) used for decelerating the circuit substrate and a second detector (69) used for stopping the circuit substrate (at column 12, lines 37-67 and column 13, lines 1-27).

Both detectors (e.g. 48, 50) are for stopping the circuit substrate, which is held by the movable member. It is inherent the deceleration must occur in order for the circuit substrate to stop.

Therefore, Asai meets the limitation of "a first detector ... detected portion" (lines 12-16 of claim 22).

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tai Van Nguyen whose telephone number is 571-272-4567. The examiner can normally be reached on M-F (7:30 A.M - 4:30 P.M).

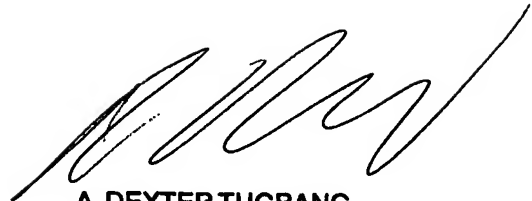
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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TN. June 29, 2007

A handwritten signature in black ink, consisting of stylized, overlapping loops and a long horizontal stroke at the end.

**A. DEXTER TUGBANG
PRIMARY EXAMINER**